

Application No. 10/550118

Response to the Office Action dated September 12, 2008 and the Advisory Action dated January 13, 2009

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) An ultrasonic probe, comprising:
 - an ultrasonic transducer that scans an ultrasonic beam;
 - a transducer-swinging motor that allows the ultrasonic transducer to perform swing scanning in a direction crossing a scanning direction of the ultrasonic beam;
 - a rotary encoder that generates a pulse according to a rotational position of the transducer-swinging motor; and
 - an encoder correction ROM that stores ~~an actual~~ previously measured swing scanning angle of the ultrasonic transducer with respect to each count value obtained by counting pulses from the rotary encoder, and outputs the ~~stored actual~~ previously measured and stored swing scanning angle of the ultrasonic transducer ~~to outside~~.
2. (Original) The ultrasonic probe according to Claim 1, wherein the encoder correction ROM stores swing directional angles that are different between a forward path of swing scanning and a return path of the swing scanning.
3. (Currently Amended) An ultrasonic diagnostic apparatus, comprising:
 - an ultrasonic probe comprising an ultrasonic transducer that scans an ultrasonic beam, a transducer-swinging motor that allows the ultrasonic transducer to perform swing scanning in a direction crossing a scanning direction of the ultrasonic beam, a rotary encoder that generates a pulse according to a rotational position of the transducer-swinging motor, and an encoder correction ROM that stores ~~an actual~~ previously measured swing scanning angle of the ultrasonic transducer with respect to each count value obtained by counting pulses from the rotary encoder, and outputs the ~~stored actual~~ previously measured and stored swing scanning angle of the ultrasonic transducer ~~to outside~~;

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a transmitting/receiving ~~means-element~~ that excites vibrators of the ultrasonic transducer and receives an ultrasonic echo reflected by a subject;

an encoder counter that counts pulses from the rotary encoder;

a main controlling ~~means-element~~ that reads out, from the encoder correction ROM in the ultrasonic probe, the ~~actual-previousl~~y measured swing scanning angle of the ultrasonic transducer with respect to each of the count[[er]] value;

a motor controlling ~~means-element~~ that performs driving control on the transducer-swinging motor according to the count value from the encoder counter;

a three-dimensional image processing ~~means-element~~ that forms a three-dimensional image based on ultrasonic echo data obtained by the transmitting/receiving ~~means-element~~, the count value from the encoder counter, and the ~~actual-previousl~~y measured swing scanning angle of the ultrasonic transducer with respect to each of the count value that is provided by the main controlling ~~means-element~~; and

an image display ~~means-element~~ that displays the three-dimensional image.

4. (Original) The ultrasonic diagnostic apparatus according to Claim 3, wherein the encoder correction ROM stores swing directional angles that are different between a forward path of swing scanning and a return path of the swing scanning.

5. (Currently Amended) An ultrasonic diagnostic apparatus, comprising:

an ultrasonic probe comprising an ultrasonic transducer that scans an ultrasonic beam, a transducer-swinging motor that allows the ultrasonic transducer to perform swing scanning in a direction crossing a scanning direction of the ultrasonic beam, a rotary encoder that generates a pulse according to a rotational position of the transducer-swinging motor, and an encoder correction ROM that stores ~~an a~~ ~~actual-previousl~~y measured swing scanning angle of the ultrasonic transducer with respect to each count value obtained by counting pulses from the rotary encoder, and outputs the ~~stored-actual~~ ~~previousl~~y measured and stored swing scanning angle of the ultrasonic transducer ~~elements-unit to outside~~;

a transmitting/receiving ~~means-element~~ that excites vibrators of the ultrasonic transducer and receives an ultrasonic echo reflected by a subject;

an encoder counter that counts pulses from the rotary encoder;

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a main controlling ~~means~~element that reads out, from the encoder correction ROM in the ultrasonic probe, the ~~actual~~previously measured swing scanning angle of the ultrasonic transducer with respect to each ~~of the~~ count value;

a motor controlling ~~means~~element that performs driving control on the transducer-swinging motor according to the count value from the encoder counter and the ~~actual~~previously measured swing scanning angle of the ultrasonic transducer with respect to each ~~of the~~ count value that is provided by the main controlling ~~means~~element;

a three-dimensional image processing ~~means~~element that forms a three-dimensional image based on ultrasonic echo data obtained by the transmitting/receiving ~~means~~element;
and

an image display ~~means~~element that displays the three-dimensional image.

6. (Original) The ultrasonic diagnostic apparatus according to Claim 5, wherein the encoder correction ROM stores swing directional angles that are different between a forward path of swing scanning and a return path of the swing scanning.